

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. (Original) A magnetic read/write head having a protective coating
2 comprising:
3 a highly tetrahedral amorphous carbon.

1 2. (Original) A magnetic recording media for use with a read/write head,
2 the media comprising:
3 a substrate;
4 a magnetic layer disposed over the substrate; and
5 a protective layer over the magnetic layer, the protective layer comprising a
6 highly tetrahedral amorphous carbon;
7 wherein the protective layer has a thickness of less than about 50 Å and a
8 hardness of over about 80 GPa;
9 wherein the protective coating is adapted for use during continuous contact of the
10 media with the read/write head; and
11 wherein the media has an areal density of over 1 gigabyte per square inch.

1 3. (Original) A method for depositing a protective coating comprising a
2 continuous highly tetrahedral amorphous carbon on a substrate, the method comprising:
3 ionizing a source material so as to form a plasma containing ions which comprise
4 carbon; and
5 energizing the ions to form a stream from the plasma toward the substrate so that
6 carbon from the ions is deposited on the substrate, wherein the ions impact with an energy
7 which promotes formation of sp^3 carbon-carbon bonds.

1 4. (Original) A method as in claim 3, wherein the carbon is deposited on the
2 substrate at a rate higher than about 10 Å per second.

1 5. (Original) A method as in claim 3, wherein the source material comprises
2 acetylene.

1 6. (Original) A method as in claim 3, wherein the substrate comprises at
2 least one of magnetic recording media, glass, optics, machine tools, and integrated circuits.

1 7. (New) A method for enhancing an ion beam, the ion beam produced by
2 inductively ionizing a plasma within a plasma volume and capacitatively coupling the plasma so
3 as to form a stream of ions from within the plasma volume, the method comprising:
4 moving a magnetic field through the plasma volume to promote even resonant
5 inductive ionization and homogenize the ion beam.

1 8. (New) A method as claimed in claim 7, wherein moving the magnetic
2 field comprises selectively energizing magnetic coils disposed about the plasma volume.

1 9. (New) A method as claimed in claim 7, wherein the magnetic field
2 rotates through the plasma volume with a frequency which is much less than the frequency of an
3 alternating induction potential.

1 10. (New) A method as claimed in claim 7, wherein the magnetic field is
2 transverse and rotates about an axis which is substantially normal to a capacitatively coupled
3 extraction grid.

1 11. (New) A method as claimed in claim 7, wherein the magnetic field
2 rotates with a frequency of less than 10,000 Hz.

1 12. (New) An inductive ionization resonance system for use with an ion-
2 beam source including an antenna disposed about a plasma volume for inductively ionizing a
3 plasma therein, a coupling electrode exposed to the plasma volume, and an extraction electrode

4 disposed over an opening of the plasma volume so that the extraction electrode is capable of
5 extracting a stream of ions of the plasma therethrough by capacitive coupling, the system
6 comprising at least one coil disposed adjacent the plasma volume, the at least one coil capable
7 of moving a transverse magnetic field through the plasma volume to homogenize the stream of
8 ions.

1 13. (New) A system as claimed in claim 12, further comprising a plurality of
2 coils disposed about the container so that the magnetic field can be moved within the plasma
3 volume by selectively energizing one or more coils.

1 14. (New) A system as claimed in claim 13, wherein the plurality of coils are
2 radially disposed about the axis.

1 15. (New) A system as claimed in claim 12, wherein the plasma volume
2 substantially defines a length and a diameter, wherein the opening is disposed at one end of
3 the length, and wherein the length is between about one third the diameter and three times the
4 diameter.